

Effectiveness of the Alarm System Policy on Reducing Ambulance Response Time in prehospital Emergency Patients care

Introduction Reduction of ambulance response time leads to an increase in positive patient outcomes. In hopes to meet an 8-minute response time guideline for patients with code red, Maharaj Nakorn Chiang Mai Hospital introduced an alarm system policy on 1 November 2017 to decrease turnout time, which is a part of response time.

Objectives To determine whether the response time accomplished within 8 minutes would be increased after alarm system policy introduction. Following this, the determination of whether the mortality rate in 24 hours and the mortality rate in the emergency room would be decreased after the introduction of the alarm system policy.

Methods An interrupted time series was conducted in a collection of code-red patients between 1 November 2015 to 31 October 2019. Data were collected from the medical records of Maharaj Nakorn Chiang Mai Hospital. The time period for the collected data was separated into the following: pre-protocol period (1 November 2015 to 31 October 2017) and post-protocol period (1 November 2017 to 31 October 2019).

Results A total of 552 patients were included in the overall analysis. The success rate of response time within 8 minutes of patient with code red in pre-protocol period and post-protocol period was 64.62% and 73.11% respectively, where it was founded that success rate was significantly higher (adjusted odd ratio = 1.627, 95% CI: [1.017, 2.602]; $P < 0.05$) in post-protocol. A decrease in mortality rate in 24 hours and mortality rate in the emergency room was observed post-protocol from the segmented regression model. However, no significant difference was evident through the process of statistical analysis.

Siwakorn
Chanchalotorn¹, Tin
Ayurag¹, Supakorn
Suwansilisil¹,
Christsanutth
Siripakkaphant¹,
Nattaphan Siritikul¹,
Petnumnueng
Ponsumritchok¹,
Supanut Waroonkun¹,
Parinya Tianwibool²

¹ Faculty of Medicine, Chiang Mai University

² Department of emergency,
Faculty of Medicine, Chiang Mai University

Correspondence to:

Siwakorn Chanchalotorn
Faculty of Medicine, Chiang Mai University, Thailand

siwakornbcc@gmail.com

Conclusion The outcome of this simple alarm system indicates that implementation of the protocol could significantly reduce response time, achieving the 8-minute goal. Therefore, this protocol will promote better emergency service in pre-hospital care.